

## TRANSMISSION CONTROL SYSTEM

### BACKGROUND

5/11/05 2002<sup>1</sup> This application is a continuation of prior U.S. Serial No. 10/209,444, filed July 30, now Patent No. 6,684,148 which claims benefit of 6/388,533 filed 6/12/02

5 Clutch pack braking is a well-established method of braking vehicles and refers to using clutch packs in the transmission system to slow or brake a vehicle. Clutch pack braking is usually performed by slipping one clutch pack while locking the other clutch pack. This technique concentrates all of the energy in the slipping pack, or if both packs are slipped, can produce unpredictable slipping in both clutch packs. Also, if part throttle  
10 braking is attempted, clutch pack braking can stall the vehicle engine by turning the torque converter turbine in the transmission system backwards and overloading the engine. Thus a vehicle operator currently has to use a brake pedal to stop a vehicle at higher speeds.

Energy is wasted in power shift transmissions due to large torque converter slippage at low truck speeds. This usually happens when the vehicle is generating maximum pushing forces. This energy loss can be up to 100 percent of engine power.

The present invention addresses this and other problems associated with the prior art.

### SUMMARY OF THE INVENTION

A transmission system includes a Central Processing Unit (CPU) that controls the turbine speed of a torque converter by reducing engine speed and then slipping two clutch packs at the same time. The CPU reduces the engine speed to idle, regardless of the specific throttle request made by the vehicle operator. The CPU then controls clutch pack activation pressure to obtain the optimum split of energy between the two clutch packs during braking.